

THE GENUS *POTOROSTRONGYLUS* JOHNSTON AND MAWSON (NEMATODA: TRICHONEMATIDAE) FROM MACROPOD MARSUPIALS

by PATRICIA M. MAWSON*

Summary

MAWSON, Patricia M. (1974).—The genus *Potorostrongylus* Johnston and Mawson (Nematoda: Trichonematidae) from macropod marsupials. *Trans. R. Soc. S. Aust.* **98** (3), 135-137, 31 August, 1974.

The genus *Potorostrongylus* is redefined, and it is suggested that it is most closely related to the genera *Zoniolaimus* and *Labiostromylus*. *P. finlaysoni*, the genotype, is recorded with additional details of morphology from *Potorous apicalis* and *Bettongia gaimardi* from Tasmania. *P. aepyprymnus* n.sp. is described from *Aepyprymnus rufescens* from Queensland.

Introduction

The genus *Potorostrongylus* Johnston & Mawson (1939, p. 306) was placed by Yamaguti (1960, p. 403) as a subgenus of *Zoniolaimus* Cobb, and by Popova (1960, p. 220) among genera insufficiently known; Chabaud (1965) did not mention it.

New material is now available, including the type species *P. finlaysoni* Johnston & Mawson from the type host from a new locality, as well as specimens from a different host and locality, apparently representing a new species.

It appears that *Zoniolaimus*† Cobb (1898, p. 312), *Labiostromylus* Yorke & Maplestone (1926, p. 67) and *Potorostrongylus* have many features in common. *Potorostrongylus* is distinguished from *Labiostromylus* mainly by the shape of the oesophagus and the type of papillae on the genital cone, and from *Zoniolaimus* by these features and by the very small buccal capsule. A revised diagnosis is given: Trichonematidae: Zoniolaiminae: Cervical cuticle inflated; anterior end with eight well developed lips, four submedian cephalic papillae and two lateral amphids on corresponding labia, dorsal and ventral labia without papillae. Short cylindrical cuticular buccal capsule; oesophagus cylindrical, ending in a constriction followed by elongate bulb. Male: spicules equal; bursa only slightly lobed; dorsal ray bifid, each branch giving off a short lateral

stem, externo-dorsal ray arising separately; ventro-lateral separate for most of its length; the ventral genital cone well developed, bearing a row of stout setae on ventral lip of cloaca, and two small cuticular alae laterally. Female: vulva shortly in front of anus, vagina short, ovejectors opposed, uteri both anterior to vulva.

Parasitic in stomach of macropod marsupials.

Type species: *P. finlaysoni* Johnston & Mawson.

Other species: *P. aepyprymnus* n.sp.

Potorostrongylus finlaysoni Johnston & Mawson, 1939: 308, from *Potorous apicalis* (Syn. *P. triductylus*), from Gippsland, Vic.

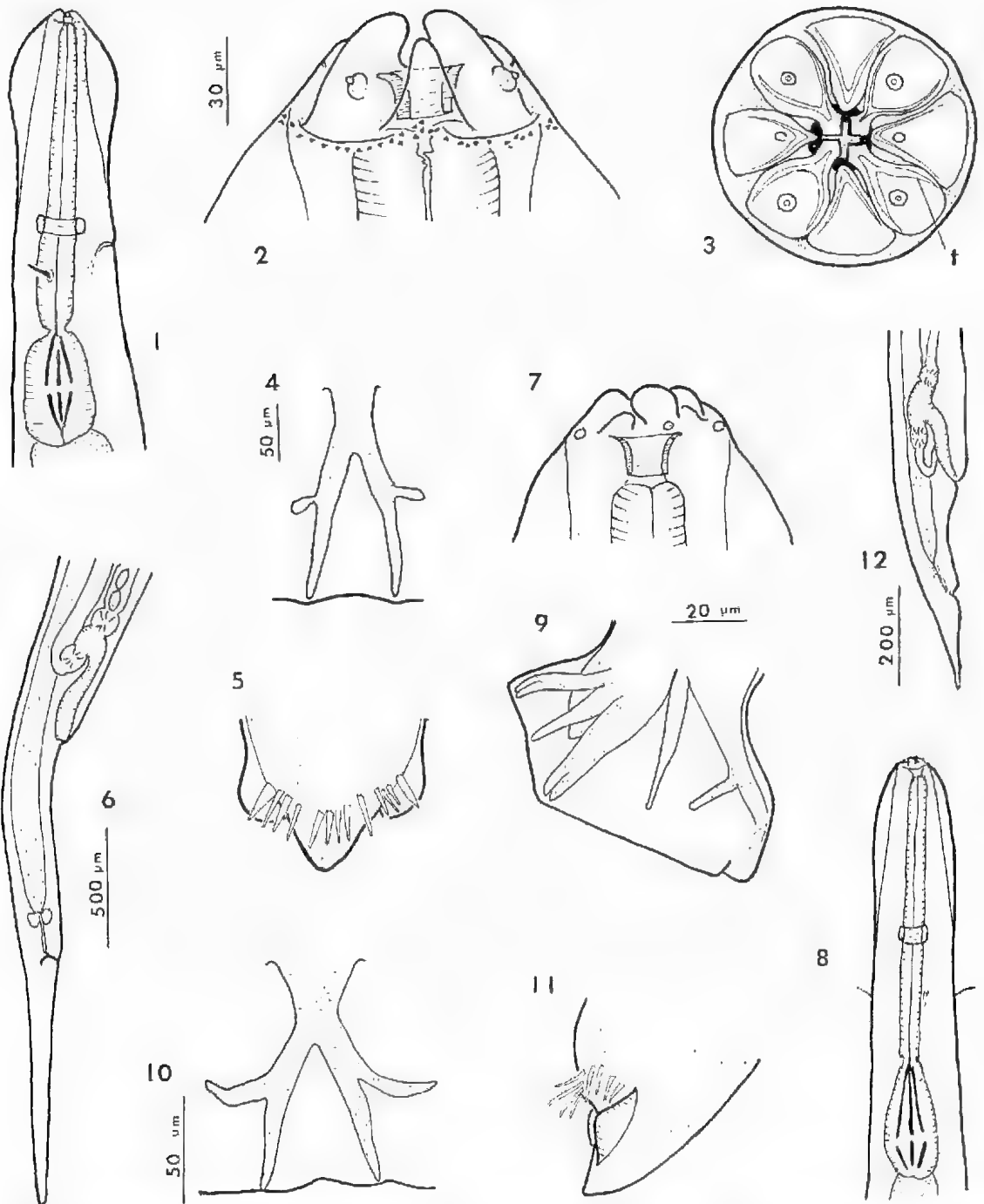
FIGS. 1-6

Hosts and localities: *Potorous apicalis*, *Bettongia gaimardi*, from Tas.

The new specimens agree with the earlier descriptions in most features, but some additional points have been noted. The length of the new, uncontracted, specimens is up to 13 mm in the male, to 15 mm in the female. The cuticular swelling at the anterior end is usually confined to the region from just behind the lips to about a third or half the length of the oesophagus. At the anterior end of this swelling there is a ring of refractile bodies in the cuticle: this probably has a strengthening

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† *Zoniolaimus* is considered as having the characters of the type species *Z. setifera* Cobb; some species with "teeth" have been wrongly attributed to this genus.



Figs. 1- 6. *Potorostrongylus fulaysoni*. Fig. 1.—Oesophageal region. Fig. 2.—Head of female, dorsal view. Fig. 3.—Head of female, en face; t = thickening in cuticle. Fig. 4.—Dorsal ray. Fig. 5.—Genital cone, ventral view. Fig. 6.—Tail of female.

Figs. 7-12. *P. aepyprymnus*. Fig. 7.—Head of male. Fig. 8.—Oesophageal region. Fig. 9.—Bursa. Fig. 10.—Dorsal ray. Fig. 11.—Genital cone, lateral view. Fig. 12.—Tail of female.

effect. The eight lips also are strengthened, each having a V-shaped thickening of the cuticle just inside the free margin (Fig. 3, 1). No papillae have been seen on the dorsal and ventral lips, which are mostly cuticular thickenings, with very little pulp. The shallow buccal capsule is faintly striated, and its anterior end is turned outwards (Fig. 2). The lining of the oesophagus is strongly cuticularised at the angles of the triradiate lumen, giving the appearance of three longitudinal rods down the length of the oesophagus. These rods are particularly thick in the terminal bulb, and are interrupted at its midlength. The setiform cervical papillae lie at about the level of, or just behind, the excretory pore.

The bursa and bursal rays agree with the original description. The genital cone is well developed, and bears a small ala on each side, as well as about 12-13 cuticular projections forming a fringe along the ventral lip of the cloaca.

The tail of the female is long and slender, tapering to a blunt tip; the vulva is about twice the tail length from the posterior end of the body.

Potoroststrongylus aepyprymnus n.sp.

FIGS. 7-12

Host and locality: *Aepyprymnus rufescens*, from Warwick, Qld.

The general morphology of the specimens from Queensland is very similar to that described for *P. finlaysoni*. The differences are: *P. aepyprymnus* is a smaller worm; the lips are shorter, so that the buccal capsule lies behind the lips instead of, as in *P. finlaysoni*, at the level of the lower half of the lip region. The oesophageal bulb of *P. aepyprymnus* is much more elongate than that of *P. finlaysoni*

and the break in the cuticular lining is at two-thirds of its length.

The bursal rays are similar except for the dorsal ray, of which the lateral branches are distinctly longer; the genital cone is similar in shape and bears a precloacal row of about 12 setae as well as a pair of lateral alae which are however situated slightly more posteriorly on the cone than those of *P. finlaysoni*. The spicules are slightly shorter in *P. aepyprymnus*.

The tail of the female is shorter and relatively thicker than that of *P. finlaysoni*. No eggs are present.

Measurements are given in Table 1.

TABLE 1

Measurements of *P. aepyprymnus*. All measurements are in μ m.

	♂	♀
Length	5200-8000	5010-5500
Oesophagus	830-950	820-900
Antr. end—nerve ring	350-420	310-350
—cervical pap.	470-600	390-490
—excr. pore	460-580	380-490
Spicules	960-1050	-
Tail	-	170-200
Vulva—postr. end	-	250-450
Body length/oesoph. length	5.4-7.6	-
Body length/spicule length	6.2-8.4	-

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References

- CHABAUD, A. G. (1965).—Ordre des Strongylida. In Pierre-P. Grassé (Ed.), "Traité de Zoologie", Vol. 4, pp. 869-931. (Masson et Cie: Paris.)
- CORB, N. A. (1898).—Extract from M.S. Report on Parasites of Stock. *Agric. Gaz. N.S.W.* 9, 296-321.
- JOHNSTON, T. H. & MAWSON, P. M. (1939).—Some nematodes from Victorian and Western Australian marsupials. *Trans. R. Soc. S. Aust.* 63, 307-310.
- POPOVA, T. I. (1960).—"Principles of Nematology." Vol. 9, Cloaciniidae. (Moscow Acad. Sci. USSR.) (In Russian.)
- YAGAMUTI, S. (1961).—Systema Helminthum." Vol. 3, The nematodes of vertebrates. (Interscience: New York.)
- YORKE, W. & MAPLESTONE, P. A. (1926).—"The nematode parasites of vertebrates." (Churchill: London.)